# EXHIBIT D

**EXPERT WITNESS REPORT**

**of**

**MICHAEL SCUELLO AND JING ZHU, PH.D.[1]**

**December 23, 2020**

This report presents a response to the Expert Witness Report of Jacob L. Vigdor, Ph.D. dated August 24, 2020 prepared for the proceeding in U.S District Court for the Southern District of New York, *Christa McAuliffe Intermediate School PTO, Inc., et al, v. Bill de Blasio, et al.*, No. 1:18-cv-11657-ER 9 ("Dr. Vigdor's report").  Dr. Vigdor's report examines the effect of the 2018 changes to the Discovery program on Asian students.  As Dr. Vigdor notes, the two components of the 2018 change to the Discovery program are: (1) an increase in the proportion of seats at all specialized high schools reserved for students in the Discovery program; and (2) eligibility of a student for the Discovery program is no longer based solely on the student's own individual disadvantage, but the student must both (a) be individually disadvantaged, and (b) attend a middle school in which many of the students are disadvantaged, with the measure of middle school disadvantage calculated by the Economic Need Index (ENI) (the higher the school's ENI, the more disadvantaged its students). *See* pg. 5.

We focus on the two primary analyses in Dr. Vigdor's report: (1) the percentage of Asian students offered seats at the specialized high schools; and (2) the "behavioral" changes of Asian students and Dr. Vigdor's claims that such changes could have been due to the announcement of changes to Discovery program.

**Analyses Concerning Percentage of Asian Students Offered Seats at the Specialized High Schools**

We do not take issue with the empirical analyses conducted in this report prior to Dr. Vigdor's discussion of the "behavioral" changes. His analysis demonstrates that in 2019/20, after the changes to the Discovery program were implemented, Asian students had slightly *higher* admission rates to the specialized high schools than if DOE had used the algorithm it used in 2018, the year prior to the changes in the Discovery program.  That is, Dr. Vigdor explicitly states, "the cumulative impact of the Discovery expansion, the restriction of eligibility to high ENI schools, and revision of the ENI *was to slightly increase the  representation of Asian students in the specialized high schools as a whole*." (emphasis added) (p. 1; *see also* pp. 18, 21). It is not clear to us why Dr. Vigdor devotes the majority of the report (pp. 5-20) to simulations of what admissions rates would have been had there been no revision to the data used to calculate ENI. These analyses have no bearing on the actual rates of admission to NYC's eight (8) specialized high schools. It may be altogether likely that admission rates using the 2016-17 ENI or no ENI at all would have had a negative impact on the proportion of Asian students offered seats; but the fact remains that the New York City Department of Education ("DOE") used the

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[1] A copy of Mr. Scuello's CV and Dr. Zhu's biosketch are appended to this report.

revised data provided by New York State to calculate the 2018 ENI and used this ENI to determine admissions –accordingly there was no observed negative effect on Asian students.

Dr. Vigdor spends several pages discussing the 2018 increase in  schools' ENI. *See* pp. 8-13. He notes that, according to DOE, this Citywide increase in schools' ENI after 2018 was a result of improved data; in particular, New York State "implemented a new data matching process that refined methods to identify families eligible for free lunch" (p. 9 (quoting Department of Education demographic snapshot)). Dr. Vigdor then cites a secondary source (Opper, Johnston, Engberg, & Xenakis, 2019)[2] to conclude that the formula to calculate ENI may have changed rather than accept the explanation of the change provided by DOE. In consultation with the DOE, we verified that the formula provided by Opper, et al. (2019) was incorrect, and that the significant increase in ENI was indeed due to the improvement in data matching processing set forth by the New York State Education Department. However, the reason for the change in ENI is irrelevant to Dr. Vigdor's analyses – the fact is, the data provided by New York State did result in an upward revision of schools' ENI,  and this revision  led to "more schools qualified to send 8th graders to the Discovery program." (p. 11).

Dr. Vigdor's suggestion that schools within one or two points of the selected cutoff may not be fundamentally different is specious – the same could be said of schools within a certain number of points for any metric, including the author's preferred student poverty rate metric. This is, after all, the nature of setting a criterion. Likewise, his suggestion that the ENI criterion was set as 60 because it is a "tipping point" (p. 6) to reduce the proportion of Asian students while increasing the proportion of African American and Hispanic students is also conjecture – Dr. Vigdor has not done due diligence to determine why a cutoff of 60 was employed.

Of particular note is Dr. Vigdor's simulations of alternate admissions algorithms, which show how the expansion affected the racial composition of students offered admission to the specialized high schools. *See* pp. 14, Table 8. As he notes, the changes to the Discovery program resulted in a cohort with higher percentages of African American, Hispanic, and Asian students. *Id.* Because the Discovery program is intended to increase diversity in New York City's specialized high schools, it is heartening to see that it is having the expected effect of increasing the proportion of African American and Hispanic students. However, based on Dr. Vigdor's analyses it is not doing so at the expense of Asian students— Asian students comprise 53% of students offered seats at the specialized high schools  for the 2019/20 year, but would have comprised 51% of the offers using the 2018 algorithm. *Id.* Of further note, if the Discovery program were expanded without the inclusion of any ENI restriction, there would have been only minimal change in the racial composition from the 2018 algorithm. *Id.*  Specifically, under the expansion of the number of seats allotted to the Discovery program, but without any ENI restrictions, Asians would have comprised 51.4% of the offers – 0.4% more than without the expanded number of seats allotted to the Discovery program. *Id.*

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[2] Opper, I.M., Johnston, W.R., Engberg, J., & Xenakis, L. (2019). Assessing the short-term impact of the New York City renewal schools program. (RAND Education and Labor Working Paper No. WR-1303-NYCDOE). Santa Monica, CA: RAND Corporation.

Finally, we note that Dr. Vigdor provided the data showing the percentage change in the offers to Asian students in 2019/2020 compared to the offers using the 2018 algorithm, broken down by school. *See* pp. 16, 19. The data shows that the percentage of the offers increased for Asian students at six of the eight schools and decreased at two schools, Stuyvesant and Bronx Science. *See id.* We are informed by counsel that it is Defendants' position that this case concerns the overall admission of Asian students to the eight specialized high schools, not the admission to the individual schools.  Nevertheless, the provided data are misleading given Dr. Vigdor's observations elsewhere in the report.  Dr. Vigdor reports that the offers to individual students are based on each student's score on the SHSAT and his/her listed school preferences.  He also states, correctly, that since Stuyvesant is the most competitive school, if a student does not list Stuyvesant as his/her first choice then s/he won't receive an offer to Stuyvesant.  *See* p. 21. He further states that Asian students listed fewer schools and listed Stuyvesant less often as their first choice in 2019-2020 than before the Discovery program changes were implemented.  *See* p. 24. According to Dr. Vigdor's logic, with fewer Asian students listing Stuyvesant as their first choice, one would see fewer students offered seats to Stuyvesant, and failing to include one or more schools on their ranked list would reduce their chances of admission to specialized high schools. *See* p. 22. Stuyvesant conferred slightly lower percentage of offers to Asian students in 2019-20 (66.9%) than it would have using the 2018 algorithm (67.6%) – less than a percentage point (0.7) (p. 16, Table 9). Bronx Science also conferred a slightly lower percentage of offers to Asian students for the same time period (55.8 %, rather than 57.2% under the 2018 algorithm—a difference of 1.4) *See* p. 16 Table 10. Further, as noted, increases in offers were observed for the remaining six (6) schools. *See* p. 17 Table 11 and p. 19 Table 12. These observations do not seem to support the logic offered by Dr. Vigdor. What's more, he fails to provide any analyses to show whether or how changes in the listing of school choices by Asian students may have affected the percentage of offers to Asian students to each of the individual schools.

**Analyses Concerning Behavioral Changes**

In a brief section at the end of the report (pp. 21-25) Dr. Vigdor asserts there were three changes in Asian test-takers behavior in the 2018/19 and 2019/20 school years, and that these three "behavioral" changes "could" have been due to the changes in the Discovery program—this argument that the changes in the Discovery program could be the cause of the behavioral changes is purely speculative, and not supported by any research or analyses. The three behavioral changes Dr. Vigdor discusses are Asian test takers' (1) reduced tendency to list Stuyvesant as a first choice ; (2) tendency to list fewer specialized high schools overall, and (3) lower SHSAT scores. *See* pp. 24.  According to Dr. Vigdor, each of these three behavioral shifts "could logically be explained as a direct response to the Department of Education's publicly stated intent to reserve a higher proportion of seats for non-Asian students at specialized high schools" (pp. 24-25).  This conclusion is problematic.[3]

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[3] Counsel has advised that it is Defendants' position that (1) even if the behavioral changes could be shown to be caused by the publicization of the changes to the Discovery program—which as discussed extensively below, has not been shown—Plaintiffs would not state a claim; and (2) Dr.

Dr. Vigdor does not account for potential confounding factors, i.e., variables that are correlated with the announcement of the changes to the Discovery program, that may also logically account for these behavioral shifts, in whole or in part, including the timing of these behavioral shifts. The most obvious example is the proposal to eliminate the Specialized High School Admissions Test (SHSAT) as the sole means of determining admission to the specialized high schools—this proposal to eliminate the SHSAT was announced at the same time as the changes to the Discovery program and was much more heavily and frequently publicized than the Discovery program changes. Counsel inform us that Asian organizations and individuals made public statements that were widely covered in the media, that primarily opposed, as anti-Asian, the proposal to eliminate the SHSAT, but also, to a lesser extent, opposed the changes to the Discovery program as anti-Asian.

More generally, Dr. Vigdor's study can only demonstrate that the observed Asian student behavioral changes may be associated with the policy change but is nowhere close to making causal claims; i.e., the study can  show correlation not causation.  That is because statistical analyses such as those conducted by Dr. Vigdor do not adequately account for potential observed or unobserved confounding factors that might have directly caused the behavioral changes rather than the assumptions put forth (as just discussed). A well-designed causal analysis is necessary to determine how the public announcement of the expansion to the Discovery program might directly impact Asian student behavioral changes and, as a result, indirectly impact Asian student composition in the specialized high schools.  To examine how the policy change might have affected the Asian student composition via behavioral changes in these students, evidence-based causal research is required. While the typical gold-standard experimental design (i.e., randomized controlled trial) cannot be applied in this context, quasi-experimental approaches might be able to tease out the effect of the announced changes to the Discovery program on Asian student behavior, something the analyses presented by Dr. Vigdor cannot do (though these quasi-experimental designs would need more data or information than Dr. Vigdor had). [4]

For example, an interrupted time series analysis (Stuart & Naeger, 2017)[5] could be a useful tool for estimating the effects of a discrete change in policy (or law) at a given time. In this type of design, numerous observations/tests are made prior to and after the policy change which permits

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Vigdor mischaracterized DOE's "publicly stated intent" when he claimed it was  "to reserve a higher proportion of seats for non-Asians." *See* pp.24-25.

[4] Interestingly, Dr. Vigdor never claims outright that publication of the changes to the Discovery program "caused" the behavioral changes.  Rather he claims that such behavioral changes "could logically be explained" (p. 24), and "can be explained," as a response to publicization of the changes, and, at most that the evidence is "consistent with the conclusion" that the behavioral changes resulted from the publicized changes to the program.]

[5] Stuart, E.A. & Naeger, S. (2017). Introduction to causal inference approaches. In: Sobolev B., Gatsonis C. (eds) *Methods in Health Services Research*. Health Services Research book series. Springer, Boston, MA. https://doi.org/10.1007/978-1-4939-6704-9_8-1

the researcher to evaluate trends (predictable patterns of events which occur with the passing of time).  By analyzing trends, the researcher can see whether the policy change has made any real difference in the outcomes.  While Dr. Vigdor analyzed cross-sectional data[6] at three pre- and two post time points separately using regression modeling, he did not conduct a time series analysis in which autocorrelations of repeated measures of are taken into account (i.e. his analyses are not longitudinal).  Note that an interrupted time series design does not necessarily need a comparison group although a comparison group would further strengthen the design; the approach compares the outcomes observed after the policy change with what would have been expected had the change not taken place, using data from the period before the change to predict that counterfactual.[7] Typically at least three or more time points are required *after* the policy change to estimate impacts, with some researchers suggesting that up to eight (8) observations after an intervention would be required to make causal inferences.[8] Here, Dr. Vigdor had only two observations after the policy change, which is not enough to determine a trend.   Although interrupted time series analysis can control for confounding factors, for example the change in the socioeconomic status of the test-takers, if two policy events took place at the same time—i.e., the proposal to eliminate the SHSAT and the announcement of changes to the Discovery program—then an interrupted time series analysis may not be able to tease out which policy change was the cause of the observed behavioral changes.

Qualitative methods such as surveys, interviews, and focus groups could provide contextual information that would be helpful to explain whether the noted behavioral changes were affected by the announced changes to the Discovery program. Such primary data collection techniques could address whether announced changes to the Discovery program had a "chilling" effect on Asian students by directly asking these students about their perceptions and experience. Qualified researchers could develop instruments with objective targeted questions to determine

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[6] Cross-sectional data are observations that come from different individuals or groups at a single point in time; time-series data are a set of repeated measures collected from a given individual or group at usually discrete and equally spaced time intervals.

[7] One useful aspect of the interrupted time series approach is that it can be carried out with data on just a single unit (e.g., one state that changed its law), with repeated observations before and after the change/interruption.  This approach is definitely stronger in making causal inferences with a comparison group available, which is often known as a "comparative interrupted time series design".

[8] *See* e.g., Penfold, R.B. & Zhang, F. (2013). Use of interrupted time series in evaluating health care quality improvements. *Academic Pediatrics, Vol. 13(6)*, S38-S44. https://www.academicpedsjnl.net/article/S1876-2859(13)00210-6/fulltext. While Penfold & Zhang (2013) may present a conservative estimate of the number time intervals required prior to and after a treatment, it is important to note that ability to infer causation would be severely hampered if too few points were used in such an analysis for obvious reasons: while two points can make a straight line, they cannot necessarily establish a trend.
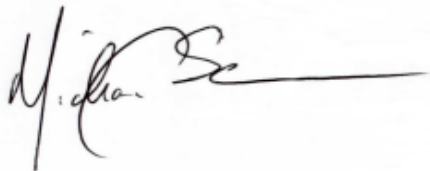
whether the observed behavioral changes were the result of the policy change, publicity surrounding the change, or other contemporaneous events (e.g., publicity related to the announced proposed elimination of the SHSAT). [9] While survey instruments would be the least costly to develop and implement via online administration, richer contextual information may be gained from focus group and individual interviews where probes could be utilized to gather further details from respondents about their responses.

Furthermore, it does not necessarily logically follow that a general perception by Asian students, even if true, that the Discovery program changes would lead to fewer Asian students offered admission to the specialized high schools would result in the cited behavioral changes. It is just as logical to conclude that this perception would result in these students studying harder for the examination, listing more of the schools as choices, and would not affect the listing of Stuyvesant as their first choice because doing so does not affect their chance of getting into the other schools.

Finally, Dr. Vigdor concludes his report with claims that failing to list Stuyvesant reduces a student's chance of admission to *any school* by 4% (p. 25), and that listing fewer schools leads to 0.4 % reduction in chance of admission for each school left off (p. 25). However, unlike the rest of the analyses in the report, there are no tables or further explanations provided on how these figures were derived. All that is offered as preface to the findings is the ambiguous statement that "a statistical model based on admissions data shows. . . " (p. 25). It is not clear why Dr. Vigdor did not explicate these analyses further given that they appear to be more seminal to his conclusions than his documentation of models of ENI change on seat offers to the specialized schools. Nonetheless, we suspect that even if we could decipher the analyses from which the numbers were derived, they would still not support his offered causative statements.

In sum Dr. Vigdor did not engage in any analyses that would allow him to determine causation, and his assertions that publicization of changes to the Discovery program may have caused the observed behavioral changes in Asian students are speculative at best.


Signed,


Michael Scuello                                      Jing Zhu, Ph.D.
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[9] Note that the sample representativeness and response rate in a qualitative design would determine whether results could be generalized to the entire population.

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**EMPLOYMENT**

**1998 –**     **Senior Associate for Design and Analysis (2006 – Present)**
**Senior Systems Associate (2002 – 2006)**
**Systems Associate / Data Analysis Manager (1999 – 2002)**
**Research Assistant II (1998 – 1999)**
*Metis Associates, Inc., New York, NY*
- Specify and execute data sharing agreements and memoranda of understanding with education agencies and other government and non-government entities to gain data access for research and evaluation purposes
- Retrieve and manage individual unit record data from local and state education agencies as well as other government and non-government entities including child welfare departments, health departments and labor departments
- Create evaluation, analysis and budget plans in response to requests for proposals and grants
- Create and administer SQL Server instances for internal and external projects, including canned analysis and reporting functions via reporting services, Crystal Reports, MS Access and Excel
- Provide staff support and training for productivity and statistical software products
- Assist with hardware installation and network support
- Conduct needs, data and systems assessments
- Specify and execute evaluation plans and statistical analyses
- Specify data elements and flow of data collection systems
- Draft evaluation reports and present findings to stakeholders
- Train clients to use proprietary data collection systems
- Develop and evaluate logic models
- Provide training and supervise junior staff members
- Oversee complex data manipulation and analysis operations
- Conduct thematic mapping and demographic analyses
- Serve as chairperson and human protections administrator for the company's Institutional Review Board

**1994 – 1999**     **Adjunct Faculty**
*Psychology Department, Brooklyn College of the City University of New York*
- Instruct undergraduate behavioral statistics and experimental methodology courses

**1992 – 1994**     **Caseworker, Quality Assurance Committee Member**
*Comprehensive Drug Abuse Treatment Program (1992–1994), Comprehensive Older Adult Program (1994), Coney Island Hospital, Brooklyn, NY*
- Conduct intake interviews, admission screenings and home visits

Scuello, Michael 2 Curriculum Vitae

- Specify and implement treatment plans
- Provide supportive therapy, referrals, and concrete services
- Create and regularly maintain computerized patient database for the drug abuse treatment facility
- Conduct regular bi-weekly evaluations of the drug treatment facility to ensure compliance with National Institute of Health (NIH) standards

**1989 – 1992**   **Volunteer**
*Psychiatry Services, Coney Island Hospital, Brooklyn, NY*
- Monitor group therapy for children with Attention Deficit Disorder (A.D.D.)
- Interview parents and children for research purposes
- Create and implement surveys and administer clinical assessments (e.g., Child Behavior Checklist, Rotter Locus of Control Scales)
- Data collection and entry, coding and other related research duties

**1987 – 1992**   **Accounts Receivable Clerk**
*Fab Industries Inc., New York, NY*
- Reconcile major accounts
- Supervise part-time workers
- General accounting, data entry, collections, and other related office duties

**EDUCATION**

**1994 – 2004**   *The Graduate School and University Center of the City University of New York*
- Pursued a doctoral degree in Experimental Psychology with a specialization in visual sensation and perception
- Dissertation topic: The effects of color temperature and brightness, within the context of museum lighting, on aesthetic experience and color vision
- Teacher's assistant for graduate level instrumentation course
- Co-developed a protocol for inclusion of computers as an integral part of student education in behavioral statistics at Brooklyn College. Co-supervised implementation of a modified protocol at Hunter College
- Supported under a NASA-IRA grant from May 1995 to December 1998 as a research assistant to develop an appropriate pseudo-color metric for medical imaging (e.g., MRI) applications
- Designed, calibrated, modified, and implemented computer and optical systems for use in research applications
- Configured, modified, and regularly maintained laboratory computers
- Designed and implemented research studies
- Supervised undergraduate research assistants and high school volunteers
- Served as Graduate Student Representative to the Experimental Psychology Doctoral Subprogram Executive Committee from January 1997 to January 1998
- Served on a committee to improve teaching evaluations for the Psychology Department at Brooklyn College (March 1997)

**1993 – 1994**    *Brooklyn College of the City University of New York*
- Transferred from Master's level Experimental Psychology program to pursue doctoral level study

**1987 – 1991**    **Bachelor of the Arts**
*College of Arts and Sciences, New York University*
- Majored in Psychology with minors in History, Art History, and Sociology

## PROFESSIONAL ORGANIZATION MEMBERSHIPS

- American Evaluation Association (AEA)
- Community Indicators Consortium (CIC)
- Eastern Evaluation Research Society (EERS)
- National Association for Welfare Research and Statistics (NAWRS)
- Society for Research on Educational Effectiveness (SREE)

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- DeFalco Harnett, S., Zhu, J., & Scuello, M. (2018, April). An examination of Bard High School Early College's impact on high school and college success. In C. Jackson (Chair), *Studies that highlight essential features of approaches and programs for reducing achievement gaps: Lessons from all-day kindergarten, teacher Leadership, early college, gifted education, and alternative programs*. Roundtable conducted at the 2018 annual meeting of the American Educational Research Association, New York, NY.
- Eisman, H., Scuello, M., & Olbert, D. (1992, April).  *Hyperactive, inattentive, and aggressive behavior*.  Poster session presented at the 63rd annual meeting of the Eastern Psychological Association, Boston, MA.
- Eisman, H., Scuello, M., Sidali, D., & Katzman, G. (1993, April).  *Personal and familial factors associated with suicidal ideation in children and adolescents*.  Poster session presented at the 64th annual meeting of the Eastern Psychological Association, Arlington, VA.
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- Rah, K. & Scuello, M. (1996, May).  *Computer aided statistics instruction protocol (CASIP):  An integration of computers into undergraduate statistics instruction and evaluation*.  Poster session presented at the 6th annual Brooklyn College Science Research Conference, Brooklyn, NY.
- Rice, R., Hudgins, R., Scuello, M., & Vanderhoek, J. (2019, October).  *Aligning civic health strategies with Census 2020*. Panel conducted at the 2019 Community Indicators Consortium Impact Summit, Denver, CO.
- Scanlon, M.J., Scuello, M., Sorrentino, S., & Kofman, S. (1996, May).  *Contrast sensitivity:  Possible implications for interpreting medical images*.  Poster session presented at the 6th annual Brooklyn College Science Research Conference, Brooklyn, NY.
- Scuello, M., Scanlon, M.J., Abramov, I., Gordon, J., Spencer, W., Wong, G., & Galinski, T. (1998, May). *A rational metric for pseudo-color*.  Poster session presented at the 10th annual convention of the American Psychological Society, Washington, D.C.
- Scuello, M., Goodman, J., & Lora, A. (2018, September).  An evaluation of three prenatal care home visitation programs in Palm Beach County.  In S. Manning (Moderator), *Measuring success: Impact and reach of home visiting*.  Panel conducted at the 2018 CityMatCH Leadership and MCH Epidemiology Conference, Portland, OR.
- Scuello, M. & Harrington, R. (2017, March).  College count$: Evidence of impact. In T. Anderson (Organizer), *Evidence from career pathway and acceleration strategies in public two-year colleges*. Symposium conducted at the Spring 2017 conference of the Society for Research on Educational Effectiveness, Washington, DC.
- Scuello, M. & Tapper, D. (2016, October).  Design considerations in propensity score matching.  In K. Rafter (Chair), *Strengthening program evaluation when RCT is not feasible: Propensity score matching in practice*.  Panel conducted at the 30th annual conference of the American Evaluation Association, Atlanta, GA.
- Scuello, M. & Zhu, J. (2017, April).  *Designing an effective well-matched comparison group study*. Workshop conducted at the 33rd annual conference of the Eastern Evaluation Research Society, Galloway, NJ.
- Wilkens, D. & Scuello, M. (2017, April).  *Advanced program evaluation*.  Workshop conducted at the Southern Grants Forum 2017, Atlanta, GA.

# BIOGRAPHICAL SKETCH

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NAME: Jing Zhu, Ph.D.

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Senior Associate, Metis Associates

EDUCATION/TRAINING *(Begin with baccalaureate and include postdoctoral training if applicable. Add/delete rows as necessary)*

| INSTITUTION AND LOCATION | DEGREE (if applicable) | Completion Date MM/YYYY | FIELD OF STUDY |
|---|---|---|---|
| Nanjing University Nanjing, China | BA | 06/2003 | English |
| The Ohio State University Columbus, OH | MA | 03/2007 | Educational Policy and Leadership |
| The Ohio State University Columbus, OH | MAS | 06/2007 | Statistics |
| The Ohio State University Columbus, OH | Ph.D. | 08/2008 | Quantitative Research, Evaluation and Measurement in Education |

## A. Personal Statement

I am an experienced researcher dedicating the past dozen years to numerous rigorous evaluations of educational and social interventions. As a What Works Clearinghouse (WWC) certified reviewer, I am familiar with stringent research and evaluation criteria and am committed to using my expertise to help programs become evidence-based. I am proficient in research design, survey research, sampling methodology, data analysis, program evaluation, and advanced statistics. My research interests mainly focus on K-12 literacy, STEM, higher education, and child welfare.

## B. Positions and Honors

## Positions and Employment

| | |
|---|---|
| 2013 – Present | Senior Associate, Metis Associates Inc., New York, NY |
| 2010 – 2012 | Senior Research Associate, Metis Associates, Inc., New York, NY |
| 2008 – 2010 | Research Associate, Metis Associates Inc., New York, NY |
| 2006 – 2008 | Graduate Research Associate, Reading Recovery National Data Evaluation Center, The Ohio State University, Columbus, OH |
| 2004 – 2006 | Graduate Teaching Associate, School of Educational Policy and Leadership, The Ohio State University, Columbus, OH |

## Other Experience and Professional Memberships

2009 – 2013    Member, Society for Research on Educational Effectiveness
2006 – 2014    Member, American Evaluation Association
2005 – 2019    Member, American Educational Research Association

## Honors

2009           2008-2009 School of Policy and Leadership Outstanding Dissertation
               Award, College of Education and Human Ecology, The Ohio State
               University
2007 – 2008    College of Education Alumni Society Scholarship, College of
               Education and Human Ecology, The Ohio State University
2006– 2007     Thomas C. Holy Fellowship Scholarship, College of Education, The
               Ohio State University
April 2006     Graduate Student Professional Travel Grant, School of Educational
               Policy and Leadership, The Ohio State University
2003 – 2004    University Fellowship, The Ohio State University
2003 – 2004    Antoinette Lowry Barr Scholarship, College of Education, The Ohio
               State University

# C. Contribution to Education Research

Since joining Metis, I have worked on many statewide and local evaluation and research projects. I have either served as the Principal Investigator (PI) or co-PI or lead statistician for evaluations that include rigorous impact study components. For these projects, I have played a key role in developing and/or implementing rigorous designs and applying the WWC procedures and standards to evaluate intervention effectiveness and help programs become evidence-based.  In addition, I have been a member of Metis Associates Institutional Review Board (IRB) for the past ten years.

**Principal Investigator, LaGuardia Community College (LGACC) – Hispanic-Serving Institutions (HSI) Program STEM-CONNECT Initiative, 2016 – present**
Currently conducting a rigorous quasi-experimental evaluation for the STEM-CONNECT initiative at LGACC that aims to build guided pathways to STEM careers for Hispanic, African-American, and immigrant students. Comparing the program participants to a closely-matched group of non-participants, the impact study examines the short-, intermediate-, and long-term impacts of the initiative on students' persistence in STEM majors as well as their college persistence, performance in math courses, and completion of STEM degrees.

**Co-Principal Investigator, RCT evaluation of the Accelerate, Complete, and Engage (ACE) program at CUNY John Jay College of Criminal Justice, 2018 – present**

Currently collaborating with CUNY to conduct an RCT evaluation of the ACE program, with support from Arnold Ventures. ACE was piloted by John Jay College in fall 2015 as a baccalaureate version of the highly successful Accelerated Study in Associate Programs (ASAP). The CUNY ASAP program strives to help low-income students complete associate degrees on time and to go on to jobs with career potential or to transfer to four-year colleges. ACE is designed to significantly increase baccalaureate completion rates based on the principles of ASAP. The RCT study examines the impacts of the ACE program on four- and five-year baccalaureate graduation rates, as well as persistence, credit accumulation, and GPA in each academic year.

**Co-Principal Investigator, Single Stop USA's College Initiative at Community College of Philadelphia (CCP), 2014-2018**
Recently completed an impact evaluation of the Single Stop USA's Community College Initiative at CCP, supported by a subgrant from the GreenLight Fund's Social Innovation Fund (SIF). The initiative helps community college students to access critical financial and health benefits and provides various services such as, among others, financial counseling, tax preparation, case management, and legal counseling. Evaluation used a rigorous quasi-experimental design to compare students who participated in the initiative to well-matched comparison students with regard to target academic outcomes, including college persistence, GPA, credit accumulation, and graduation.

**Lead Statistician, Regional Partnership Grant (Round III): Montefiore Medical Center (MMC) Initiative, 2015-2019**
Led a rigorous impact evaluation of a five-year Regional Partnership Grant funded by the Children's Bureau of the U.S. Department of Health and Human Services (HHS). The initiative was built on a partnership (between MMC, NYC Administration for Children's Services, and Metis) designed to improve the well-being of children affected by parental substance abuse. A well-matched comparison group design was used to compare the target outcomes of the program participants with similar non-participants in the domains of child safety, well-being, and permanency, as well as adult recovery and family functioning.  Worked closely with Mathematica, the federal technical assistance provider, to meet the Title IV-E Prevention Services CLEARINGHOUSE standards.

**Lead Statistician, i3 Arts Achieve, 2010-2015**
Completed impact analyses for an RCT study of Arts Achieve, a 5-year U.S. Department of Education Investing in Innovation (i3) grant. Project was built on a close partnership among the NYC Department of Education, Studio in a School, and four other of the NYC's premier cultural organizations. It aimed to improve student arts achievement through the development and implementation of performance-based arts assessments and targeted professional development for arts educators in the use of data to guide their instruction. Evaluation used a cluster randomized design and examined changes in art teachers' instructional practices and students' arts and literacy achievement.

**Lead Statistician, Striving Readers: Chicago and Ohio Initiatives, 2006-2011**
Worked on the rigorous impact studies of two Striving Readers projects awarded to the Chicago Public Schools (CPS) and the Ohio Department of Youth Services (ODYS) by the US Department of Education. The CPS study employed a cluster randomized controlled trial design, whereas the ODYS study used student level randomization. Both examined the literacy achievement of struggling adolescent readers as compared to a control group over a four-year period.

## D. Additional Information: Research Support and/or Scholastic Performance

Mastrorilli, T., Harnett, S., & **Zhu, J.** [2014]. *Arts Achieve*: Impacting student success in the Arts: Preliminary findings after year 1 of implementation. *Journal of Learning through the Arts, 10(1),* http://escholarship.org/uc/item/6c81239d.

Harnett, S., **Zhu, J.,** & Scuello, M. (2018). *An Examination of Bard High School Early College's Impact on High School and College Success*. Paper presented at the annual meeting of the American Evaluation Association, New York, NY.

**Zhu, J.**, Tapper, D., & Alemany, J. (2013). *Evaluating Program Impacts of the Graduate, Prepare, Succeed - New York City Initiative*. Paper presented at the annual meeting of the American Evaluation Association, Washington, D.C.

**Zhu, J.**, Loadman, W.E., & Moore, R. (2012). *Investigating Program Impact Using Hierarchical Linear Modeling: A Comparison of Intention-to-Treat and Treatment-on-the-Treated Analyses*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, British Columbia, Canada.

**Zhu, J.**, Loadman, W.E., D'Costa, A.G., & Lomax, R.G. (2011). *Power Comparisons for Impact Studies of a Reading Program via Monte Carlo Simulations.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

**Zhu, J.**, Loadman, W.E., Lomax, R.G., & Moore, R. (2010). *Evaluating Intervention Effects of Scholastic READ 180 on Low-Achieving Incarcerated Youth*. Paper presented at the spring conference of the Society for Research on Educational Effectiveness in Washington, D.C.

**Zhu, J.**, Tunik, J., & Simon, A.J. (2010). *Estimating Program Impact Using the Bloom Adjustment for Treatment No-Shows: Evaluation of a Literacy Intervention with Hierarchical Linear Modeling.* Paper presented at the annual meeting of the American Evaluation Association, San Antonio, TX.

**Zhu, J.**, Loadman, W.E., Lomax, R.G., D'Costa, A.G., & Moore, R. (2010). *Evaluating Intervention Effects of a Reading Program for Low-Achieving Incarcerated Youth*

*with Mixed-Effects Modeling.* Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

**Zhu, J.**, Loadman, W.E., Lomax, R.G., & Moore, R. (2009). *Evaluating Intervention Effect of a Reading Program for Low-Achieving Incarcerated Youth with Multi-Level Growth Modeling.* Paper presented at the annual meeting of the American Evaluation Association, Orlando, FL.

**Zhu, J.**, Lomax, R.G., Loadman, W.E., & D'Costa, A.G. (2009). *Identifying Statistical Properties of Intervention Effect Estimate Distribution via Simulation Studies.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

**Zhu, J.** & Gómez-Bellengé, F.X. (2008). *Investigating Impact of School Characteristics on Intervention Effects Using Hierarchical Linear Modeling.* Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

**Zhu, J.** & Gómez-Bellengé, F.X. (2008). *A Quantile Regression Analysis of Student Background Effects on Reading Achievement.* Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

**Zhu, J.** & Gómez-Bellengé, F.X. (2007). *Comparing Urban and Suburban Schools: An Investigation of the Intervention Effects of Reading Recovery with Multi-level Growth Modeling.* Paper presented at the annual meeting of the American Evaluation Association, Baltimore, MD.

**Zhu, J.**, Altschuld, J.W., Kwon, D.H. & White, J.L. (2007). *Consortium-wide Evaluation of a Minority Science, Technology, Engineering, and Mathematics Retention Project: The Effects of Interaction on Decisions to Persist.* Paper presented in a panel session at the annual meeting of the American Evaluation Association, Baltimore, MD.

**Zhu, J.** (2006). *Comparing Models for Learning Data – Structured Latent Curves versus Repeated Time Series.* Paper presented at the annual meeting of American Educational Research Association, San Francisco, CA.

**Zhu, J.** (2006). *Capturing the Process of Change in Vocabulary Learning with Structured Latent Curve Analysis.* Paper presented at the annual meeting of Mid-Western Educational Research Association, Columbus, OH.

**Zhu, J.**, Altschuld, J.W., White, J.L., Kwon, D.H. & Lee, Y-F. (2006). *New Directions in Evaluating the Ohio Science and Engineering Alliance: Psychological Perspectives.* Paper presented in a multi-paper session at the annual meeting of the American Evaluation Association, Portland, OR.